**Introduction:** Batteries are very useful in world today and are used to power flashlights, computers, cars, etc. As Scientists, we are always looking for ways in which we can reduce carbon footprint and come up with innovations, ideas and inventions that allow us to come up with unique and environment friendly product. Today we are going to look at whether lemons can make a good battery or not.

**Materials:**

1. Four to five juicy lemons

2. Five galvanised nails or zinc washers

3. Five copper pieces (size of 10 cent piece)

4. Six wires

5. An LED

6. Volt meter

**Method:**

1. Make a slit into each lemon approximately 3-4 inch apart

2. In one slit push copper piece

3. In another slit push zinc nail or washer

(Make sure that copper and zinc pieces do not touch each other)

4. Make a series circuit using lemons by connecting each lemon with the wires provided

5. Attach the wire from copper piece of the lemon at one end to the long leg of the LED

6. Attach the wire from zinc piece of the lemon at the other end to the short leg of the LED

7. Observe and record results

**Observation Table:**

\* LED may not necessarily light up.

You can explain why in the discussion question.

|  |  |  |  |
| --- | --- | --- | --- |
| **No of lemons** | **Prediction ( LED Will light or not)** | **Voltage** | **LED\* lit up**  **(Yes/ No)** |
| 1 |  |  |  |
| 2 |  |  |  |
| 3 |  |  |  |
| 4 |  |  |  |
| 5 |  |  |  |

**Discussion Questions:**

1. Did the observations match predictions when you were compared the different numbers of lemon? Why do you think the LED did or did not light up?

2. What was the voltage across the circuit and what does this mean in terms of electric current passing through the circuit?

3. Which metal is anode and which metal is cathode in this battery and which way is the flow of electrons?

4. In a battery electrolyte is made up of ion and helps make successful battery. What is the electrolyte in this battery?